



# INTERMOUNTAIN POWER SERVICE CORPORATION

June 7, 2001

Richard Sprott, Director  
Division of Air Quality  
Department of Environmental Quality  
P.O. Box 144820  
Salt Lake City, UT 84114-4820

Attention: Milka Radulovic

Dear Director Sprott:

## **IPSC NOTICE OF INTENT: Corrections**

On April 4, 2001, Intermountain Power Service Corporation (IPSC) submitted a Notice of Intent (NOI) to modify the Intermountain Generating Station (IGS) in Delta, Utah. Up through May 29, 2001, IPSC submitted other information for the NOI, including a Best Available Control Technology (BACT) analysis. Pursuant to a request from the Division of Air Quality, we are herewith submitting information that corrects inaccuracies found in those documents.

### **Corrections to the Notice of Intent, dated April 4, 2001:**

#### **Page 1, 2<sup>nd</sup> paragraph under Section (1) PROCESS DESCRIPTION:**

This paragraph discusses boiler capacity in the last sentence. This should state that 'normal' boiler 'operating' capacity is about 6.2 million lbs steam per hour at 2822 psi drum pressure. The current boiler maximum capacity rating (MCR) is 6.6 million lbs steam per hour at 2975 psi.

#### **Page 2, Last paragraph under Section (3) POLLUTION DEVICE DESCRIPTION:**

This paragraph discusses proposed changes to NOx control technology in the last sentence. The term "moderately" should be removed, and the words "addition of best available control technology" should replace "replacement of the existing dual register low NOx burners with new technology staged combustion low NOx burners." The last sentence would then read "Also, the project includes installation of improved NOx controls, such as the addition of best available control technology."

#### **Page 5, second bullet, "NOx Reduction Project":**

The term "moderate" should be replaced with "BACT" in the first and last sentences.

Mr. Richard Sprott

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ATTACHMENT 1, Worksheet A:

A new worksheet is attached to correct oversights in decimal or arithmetic errors, specific to lead and beryllium.

ATTACHMENT 1, Worksheet B:

A new worksheet is attached to correct oversights in decimal or arithmetic errors, specific to lead and beryllium.

ATTACHMENT 1, Worksheet C:

This worksheet addresses hazardous air pollutants as required at R307-410-4. There are several chemicals for which screen modeling may be required. A new worksheet is attached with modeling results using SCREEN3.

**Corrections to BACT Analysis, dated May 29, 2001:**

Page 2, Table 1, Typical Coal Characteristics:

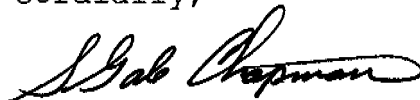
This table has several different types of ASTM analytical representations of coal. To clarify this, a new Table 1 is attached here.

**Completion**


We appreciate the efforts of your staff in working with us. In a June 1, 2001 meeting, IPSC & DAQ discussed a probable time line to bring an approval order to fruition. We therefore assume that our NOI application is considered complete. However, IPSC will continue to provide clarifying information as requested to ensure the approval process proceeds smoothly. If, for some reason your office foresees any problem that could delay the issuance of an approval order, please contact us as soon as possible.

If you or any one of your staff have any questions, please contact Mr. Dennis Killian, Superintendent of Technical Services, at 435-864-4414, or [dennis-k@ipsc.com](mailto:dennis-k@ipsc.com).

Cordially,



S. Gale Chapman  
President and Chief Operating Officer

 RJC/BP/db  
Enclosures

cc: Blaine Ipson, IPSC  
Reed Searle, IPA  
Mike Nosanov, LADWP

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NOI / PSD Calculations				ATTACHMENT 1: Worksheet A			
Operating & Production							
Parameter	Average Value	UoM	Post-Change Value				
Rated Output	875	Mwhe	950				
Fuel Use (Coal)	5,264,292	tons/yr	5,578,473				
Plant Operating Time	16,386	Unit hours	16,386				
Heat Value	11,872	BTU/lb	11,872				
Heat Input (Actual)	7,628	MMBtu/hr	8,083				
Heat Input (Design)	8,352	MMBtu/hr	9,225				
Heat Rate	9,564	Btu/KW/hr	9,475				
Flow - Stack	125,000,000	scfh	133,000,000				
Emissions							
Parameter/Pollutant	2 Yr Average Value	UoM	Post-Change Value	Change +/-	PSD Significance Levels	PSD Major Trigger Value	Difference (Trigger - Post) PSD Triggered?
PSD							
SO2	3586.31	Tons	3513.10	-73.21	40	3626.31	-113.21 N
SO2 % Removal	93.62	%	93.88				
NOx	25143.97	Tons	24346.10	-797.87	40	25183.97	-837.87 N
CO	1317.06	Tons	1394.60	77.54	100	1417.06	-22.46 N
PM10	273.77	Tons	283.51	9.75	15	288.77	-5.25 N
Lead	0.087	Tons	0.105	0.018	0.600	0.687	-0.582 N
VOC	12.65	Tons	13.40	0.75	40	52.65	-39.25 N
Beryllium	0.0010	Tons	0.0011	0.00010	0.0004	0.0014	-0.00030 N
Mercury	0.081	Tons	0.105	0.024	0.100	0.181	-0.076 N
Fluorides (HF)	9.70	Tons	10.16	0.46	3	12.70	-2.54 N
Sulfuric Acid	4.06	Tons	4.05	-0.01	7	11.06	-7.01 N

PSD / NSPS Observations														ATTACHMENT 1 Worksheet B									
Plant Emissions Data (PSD/NSPS)														Fluorides (F-) (lb)	Mercury (lb)	Beryllium (lb)	VOC (lb)	Lead (lb)	PM10 (lb)	SO2 (lb)	NOx (lb)	SO2 % Removal	SO2 (tons)
1996	3759	82.28	1080	83	224	3.57	270	19136															
1997	5076	92.05	1281	108	263	4.17	323	22805															
1998	4281	92.67	1321	114	167	2.23	331	23436															
1999	3698	93.57	1479	124	156	2.18	123	19187															
2000	3474	93.67	1609	132	191	2.03	201	19621															
5 Year Avg	4058	92.5	1367	126	200	2.03	230	20854															
Last 2 Yr Avg	3586	93.6	1514	137	174	2.03	162	19394															
TRIGGER: Average + Std. Incr.	3626	93.88	1514	137	174	2.03	162	19394															
Projected Actuals	3513	93.88	14346	135	210	2.23	211	20313															
Plant Operations Data														NSPS Determination (lb/hr)									
1996	4310562	15559	11880	0.39	284	0.07	489	6045						Maximum NOx	Maximum SO2								
1997	5158897	16584	11789	0.37	278	0.08	813	4672						Emission Rate	Emission Rate								
1998	5278344	16555	11623	0.41	3082	0.07	513	5331						(Last 5 years)	(Last 5 years)								
1999	5244753	16462	11858	0.39	2938	0.06	449	5007															
2000	5283760	16309	11885	0.42	3202	0.06	428	5441															
5 Year Avg	5055271	18275	11843	0.39	2905	0.07	498	6045						Max. - Prev. 5 yrs:	Proposed Average:								
Last 2 Year Avg	5264292	18386	11872	0.40	3070	0.06	438	2872						Proposed Max:									
Projected Actuals	5578473	18386	11843	0.37	2972	0.05	429	4613															
OPERATING CHANGES																							
Present Operation	7628	8352	5264292	8.1	875									Stack Flow (lb/hr)									
Proposed Operation	8083	9225	5,578,473	8.9	950									125,000,000									

ASSUMPTIONS:

All increases / decreases based on coal use only. Fuel oil & other bulk chemical use not expected to change.

Estimated 15% nominal reduction, with new NOx controls, of 2 yr. avg. NOx and 2854 ton/yr increase in potential NOx formation.

Estimated 4% nominal removal improvement in scrubber efficiency.

HAPS PSD triggers calculated per UDAQ Dispersion Modeling Guidelines at R307-410-4.

VOC's calculated from HAPS list.

Projected nominal efficiency improvement: 8.0%

Projected nominal capacity improvement: 8.6%

Projected heat input / coal usage increase: 5.9%

Projected uncontrolled NOx increase: 11.2%

## **SCREEN3 Modeling Results - HAP's**

Listed compounds exceeded Emission Treshold Values, or had no OSHA values.

<b>POLLUTANT</b>	<b>Calc'd Results</b>	<b>Model Input</b>	<b>Model Output</b>
	<b>Emission Rate (lbs/hr)</b>	<b>Emission Rate (g/s)</b>	<b>Max. Concentration (ug/m3)</b>
Arsenic	0.001230355	0.000155025	0.00013
DEHP	0.001399686	0.00017636	0.0001479
Cyanide	0.047934441	0.00603974	0.005065
2,4-Dinitrotoluene	5.36866E-06	6.76451E-07	5.673E-07
Ethylene Dibromide	2.30085E-05	2.89907E-06	0.000002431
Propionaldehyde	0.007286035	0.00091804	0.0007699
Hydrogen Chloride	0.009981802	0.001257707	0.001055
Hydrogen Fluoride	0.056113641	0.007070319	0.00593

### **Assumptions:**

Point Source  
Stack Height 219m  
Stack Diameter 8.6m  
Gas Volume 2,166,667acfm  
Stack Temp 322K  
Ambient Temp 293K  
Receptor Height 0m (flat terrain to max distance)  
Rural Option  
No Bldg Downwash  
Simple Terrain (flat terrain to max distance)  
Full Meteorology  
Auto Distance Array  
Terrain Height 0m  
Min Distance 750m (Property Boundary)  
Max Distance 100km  
Distance to Max. Concentration 1117m

**TABLE 1  
TYPICAL IPSC COAL  
PHYSICAL AND CHEMICAL CHARACTERISTICS**

<b>Type of Analysis</b>	<b>Parameter</b>	<b>Actual Average</b>
Proximate	Volatile	38.1%
	Moisture	8.5 %
	Ash	9.2 %
	Fixed Carbon	44.2%
ASTM Other	Sulfur	0.52 %
	Heating Value	11,850 btu/lb
	Grindability	46 HGI
Ultimate	%C	66.47 %
	%H	4.77 %
	%N	1.28 %
	%S	0.52 %
	%O	9.26 %
Trace	Antimony	3.1 ppm
	Arsenic	12 ppm
	Barium	113 ppm
	Beryllium	0.38 ppm
	Cadmium	0.66 ppm
	Chromium	24 ppm
	Cobalt	2.9 ppm
	Copper	7.8 ppm
	Hydrogen Chloride	299 ppm
	Hydrogen Fluoride	63 ppm
	Lead	7.1 ppm
	Manganese	9.9 ppm
	Mercury	0.061 ppm
	Nickel	4.7 ppm
	Selenium	2.4 ppm
	Vanadium	5.6 ppm
	Zinc	7.4 ppm
Mineral (Ash)	Silicon Dioxide	63.2 %
	Aluminum Oxide	15.5 %
	Titanium Dioxide	0.8 %
	Iron Oxide	3.3 %
	Calcium Oxide	7.1 %
	Magnesium Oxide	2.9 %
	Potassium Oxide	1.5 %
	Sodium Oxide	2.1 %
	Phosphorus Pentoxide	0.2 %
	Sulfur Trioxide	4.2 %
	Silica Equivalent Value	86.4 %
	Base:Acid Ratio	0.21
	Fusion Temperature (Fluid)	2333+ F

**NOTE:**

Data provided here are estimates only, based on available industry-wide information combined with specific analyses. These are not limits, but arithmetic means bounded by wide ranges of concentrations that are dependent on fuel source and type. Solid fuels naturally have wide variability in characteristics. This fuel information is in no way intended to represent binding fuel parameters.